

REMARKS

Claims 1-3, 5-13, and 15-21 are pending in the application. Claims 1 and 11 are currently amended. Claims 4 and 14 are cancelled. Applicant respectfully requests for allowance of all the pending claims based on the following discussion.

Rejections under 35 U.S.C. §112

Claims 1 and 11 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, Examiner considers the term “can be maintained” in claims 1 and 11 as indefinite.

In response, Applicant has amended claims 1 and 11 by replacing the term “can be” with “are.” Applicant believes that the amendments overcome the rejections under section 112, second paragraph, and therefore respectfully requests that the rejections be withdrawn.

Rejections under 35 U.S.C. §103

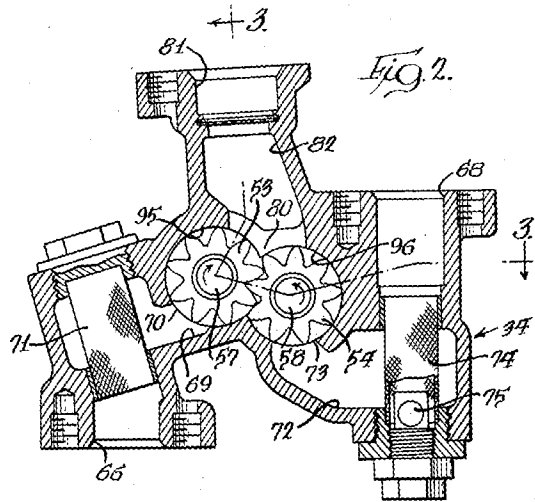
Claims 1-7 and 9 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 4,631,009 to Cygnor et al. (hereinafter referred to as “Cygnor”) in view of US Patent No. 3,677,664 to Wycliffe et al. (hereinafter referred to as “Wycliffe”).

Claim 1, as amended, is directed to a screw pump comprising: a chamber defining with first and second externally threaded rotors mounted on respective shafts rotatably disposed for counter-rotation within the chamber a plurality of flow paths having respective fluid inlets wherein a first one and a second one of the respective inlets are

located at a common low pressure side of the chamber and on a common plane, and

wherein threads of the first and second rotors are intermeshed at a location adjacent to the first and second inlets, such that fluid entering the chamber via the first and second inlets is moved through the flow paths by the first and second rotors in a manner of positive displacement, wherein the flow paths are isolated from each other such that pressure differentials are maintained among the flow paths when the screw pump is in operation. As currently amended, claim 1 now include limitation “a first one and a second one of the respective inlets are located... on a common plane.”

Cygnor does not teach “a first one and a second one of the respective inlets are located... on a common plane.” As shown in FIG. 2 of Cygnor, inlet port 66 is located on a lower plane, whereas inlet port 68 is located on a higher plane. Clearly, inlet ports 66 and 68 are not on the



same plane. It is noted that although in FIG. 4 of Cygnor, the inlet ports appear to be on the same plane, this figure is a diagrammatic view for assisting illustration of the principles of the reference. *See, col. 5, lines 47-49.* Thus, FIG. 4 cannot be interpreted literally to suggest that the inlet ports are on the same plane as illustrated therein.

It would not have been obvious for a person skilled in the art to modify Cygnor by arranging the inlet ports 66 and 68 on the same plane. Cygnor teaches a lubrication scavenge system for retrieving oil from a gear box subject to both positive and negative

gravity conditions. *See, col. 2, lines 49-58.* As show in FIG. 1, the system includes at least a gear pump 34 connected to two scavenge ports 26 and 28 of compartment 16, which houses bearings for rotatably mounting an engine shaft. *See, col. 6, lines 46 and 48.* In normal conditions, the inlet port 66 of pump 34 connected to the scavenge port 26 communicates with air in the compartment 16, and the inlet port 68 connected to the scavenge port 28 communicates with oil in the compartment 16. *See, col. 7, lines 9-17.* When the system is subject to negative gravity, the fluid communications will change in a manner that the inlet port 66 now communicates with oil and the inlet port 68 communicates with air. *See, col. 2 line 61 – col. 3, line 4.* This is advantageous because such system is able to continuously draw lubricant oil from the compartment 16 whether it is subject to positive gravity or negative gravity. *See, col. 9, lines 20-35.* In order to keep one of the ports 66 and 68 in communication with air and the other with oil at all times, it is critical that the inlet port 66 is at a lower plane and has an upwardly extended fluid passage, whereas the inlet port 68 is at a higher plane and has a downwardly extended fluid passage. If Cygnor were modified by disposing both the inlet ports 66 and 68 on the same common plane, they may be exposed to or deprived from air or oil at the same time, thereby rendering the system ineffective in some of the gravity conditions.

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon, 733, F.2d 900 (Fed. Cir. 1984).* As discussed above, modifying Cygnor by disposing both the inlet ports 66 and 68 on the same common plane would render the disclosed lubrication scavenge system unsuitable for use

in various gravity conditions. Thus, it would not have been obvious for a person skilled in the art to modify Cygnor by arranging the inlet ports 66 and 68 on the common plane.

It is noted that Wycliffe is cited for its teaching of a screw pump, and it does not teach two inlet ports, let alone that the inlet ports are on a common plane. It does not cure the deficiencies of Cygnor.

As such, Applicant respectfully submits that independent claim 1 is patentable over Cygnor in view of Wycliffe under 35 USC 103(a). Accordingly claims 2, 3, 5-7, and 9 that depend from claim 1 and include all the limitations recited therein are also patentable over Cygnor in view of Wycliffe under 35 USC 103(a). It is noted that claim 4 has been cancelled.

Claim 8 is rejected under 35 USC 103(a) as being unpatentable over Cygnor in view of Wycliffe and the cited legal precedent.

For the reasons discussed above, Applicant respectfully submits that independent claim 1 is patentable over the prior art of record under 35 USC 103(a). Accordingly, claim 8 that depends from claim 1 and includes all the limitations recited therein is also patentable over Cygnor in view of Wycliffe and the cited legal precedent under 35 USC 103(a).

Claim 10 is rejected under 35 USC 103(a) as being unpatentable over Cygnor in view of Wycliffe, and US Patent No. 6,196,810 to Taniguchi et al. (hereinafter referred to as “Taniguchi”).

For the reasons discussed above, Applicant respectfully submits that independent claim 1 is patentable over the prior art of record under 35 USC 103(a). Accordingly, claim 10 that depends from claim 1 and includes all the limitations recited therein is also patentable over Cygnor in view of Wycliffe, and Taniguchi under 35 USC 103(a).

Claims 11-17 and 19-21 are rejected under 35 USC 103(a) as being unpatentable over Cygnor in view of Taniguchi and Wycliffe.

Independent claim 11, as amended, includes a limitations “a first one and a second one of the respective inlets are located... on a common plane.” For the reasons discussed above, Applicant respectfully submits that claim 11 is patentable over Cygnor in view of Taniguchi and Wycliffe under 35 USC 103(a).

Accordingly, claims 12-13, 15-17, and 19-21 that depend from claim 11 and include all the limitations recited therein are also patentable over Cygnor in view of Taniguchi and Wycliffe under 35 USC 103(a). It is noted that claim 14 has been cancelled.

Claim 18 is rejected under 35 USC 103(a) as being unpatentable over Cygnor in view of Taniguchi, Wycliffe, and cited legal precedent.

For the reasons discussed above, Applicant respectfully submits that independent claim 11 is patentable over the prior art of record under 35 USC 103(a). Accordingly, claim 18 that depends from claim 11 and includes all the limitations recited therein is also

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patentable over Cygnor in view of Taniguchi, Wycliffe and the cited legal precedent

under 35 USC 103(a).

CONCLUSION

Applicant has made an earnest attempt to place this application in an allowable form. In view of the foregoing remarks, it is respectfully submitted that the pending claims are drawn to a novel subject matter, patentably distinguishable over the prior art of record. Examiner is therefore, respectfully requested to reconsider and withdraw the outstanding rejections.

Should Examiner deem that any further clarification is desirable, Examiner is invited to telephone the undersigned at the below listed telephone number.

Applicant does not believe that any additional fee is due, but as a precaution, the Commissioner is hereby authorized to charge any additional fee required by this submission to deposit account number 50-4244.

Respectfully submitted,

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